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The UK dairy industry

The UK dairy industry has undergone significant changes over the last decade, which is potentially set to continue at an ever increasing rate. Year on year the number of dairy farms and dairy cows in the national herd have reduced whilst milk production has remained relatively constant at 13 million tonnes per annum. In the decade since 1999, the number of dairy farms has fallen by 46% and the number of dairy cows by 24% (DairyCo, 2010). Average farm size has increased by 38% (82 to 113 cows) with more than 50% of farms now keeping cows in herds of more than 150 in lowland areas (Defra, 2009). Today, farms with several hundred dairy cows are commonplace and farms with 1000-2000 cows also exist; planning application for an American style 'mega-dairy' keeping almost 4000 cows with potential expansion to 8000 cows is currently being processed in the UK.

Equivalent milk output from fewer cows has largely been achieved through increasing milk yield per cow, from an average 5,964 to 7,084 litres per lactation (an increase of 19%), via intense genetic selection. This has exacerbated the problems of lameness, mastitis, metabolic disorders and poor fertility and longevity (Oltenucu, 2009).

Economic pressures, predominantly that of lower margin per litre of milk sold, are largely driving the change, particularly at a time when cost of production is rising. Historically, the price of milk paid to farmers remained around 18p/l for many years. In 2007, in an attempt to stem the loss of farmers from the industry, milk price increased; in 2009 it was an average 23.71 p/l (an increase of 34.2%). During that time milk cost to the consumer increased by 60.5% (from 40.58 to 65.13 p/l) whilst retailer margin increased from 20% to 34% (DairyCo, 2010). Today, Dairy Crest Direct are asking for 27p/l to be paid urgently as non-aligned liquid contracts, currently 24.6p/l, are well below the 27.68p/l cost of production (7 January 2011 - www.thedairysite.com/news/33162).

Besides exiting the industry, there are several ways in which farmers may address economic concerns. Typical routes are of specialisation from traditional constant grazing systems to i. Large scale permanently housed systems (zero-grazing), ii. Management –intensive rotational grazing systems or iii. Organic production systems.

i. Large scale permanently housed systems (zero-grazing)

These systems have large herd sizes of several hundred to several thousand dairy cows, permanently housed in free-stall (cubicles) barns with a modern milking parlour. They rely on high yields per cow, high energy diets fed in a total mixed ration (TMR), and require high levels of management across a range of areas (husbandry, agronomy, human resource, financial, and environment). There is a modest profit margin per litre, but a sizeable net farm margin due to the economies of scale.

ii. Management –intensive rotational grazing systems

These systems have the potential to increase the financial viability of small to medium sized farms by reducing fixed and operating costs of production (Winsten et al, 2010). Pasture is a significant part of the cow's ration and the efficiency of pasture use is increased through rotational grazing (as opposed to constant grazing). The system requires a high level of grassland management and a good

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working knowledge of dry matter intakes from grass. The system has the potential to improve water quality, wildlife habitat, and benefit rural communities (Winsten et al, 2010).

iii. Organic production systems

These systems operate as above and to the organic regulations. They command a higher price per litre of milk sold and are able to achieve an equivalent UK profitable index as non-organic farms (Haskell et al, 2009).

Interestingly, a US dairy farmer confidence survey indicated that farmers specialising in confinement systems (i) were more concerned about price per litre, the cost of expansion, and the viability of their herd size than those farmers specialising in rotational grazing systems (ii); the former were also more likely to leave the industry in the next 5 years (Winsten et al, 2010).

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